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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/14/2005

Toshiki Nonaka

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/22/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,989	Applicant(s) NONAKA ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 4 and 6 to 15 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 to 4, 6, 7 and 10 to 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/3/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 3, 2010 has been entered.

Election/Restrictions

2. Claims 8 and 9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 22, 2008.

Response to Arguments

3. Applicant's arguments filed May 3, 2010, with respect to claims 1 to 4, 6,7 and 10 to 15 rejected under 35U.S.C. 103(a) as being unpatentable over Japanese patent 2003-105513 ("JP'513") have been fully considered and are persuasive. As pointed out by Applicant, a person of ordinary skill in the art would not expect to achieve a $TS \geq 980$ MPa when $TS \times EL \geq 16,000$ as claimed since all examples of JP'513 steel exhibit $TS \leq 815$ MPa. Also a person of ordinary skill in the art would not expect to achieve a non-austenitic, high tensile strength steel having $Al < 1.2\%$ as claimed since all the JP'513 steel example having $Al < 1.2\%$ exhibit a secondary phase of retained austenite. Therefore the rejection has been withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 to 4, 6, 7 and 10 to 15 are rejected under 35 U.S.C. 103 (a) as being unpatentable over European patent 1154028 to Vrieze ("EP'028") alone or in view of Japanese patent 2003-105513("JP'513").

6. EP'028 in claims 1 to 6 disclose a high strength steel sheet composition having constituents whose wt% ranges overlap or closely approximate those recited by the claims; and such similarities establishes a prima facie case of obviousness since it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches the same utility for hot-dip galvanizing and similar properties of high tensile strength and elongation, See MPEP 2144.05(I).

7. EP'028 teaches steel composition containing a lower Si limit of 0.35% which closely approximates Applicant's claimed upper Si limit 0.3% such that one skilled in the art would have expected them to have the same properties, see MPEP 2144.05(I), *Titanium Metals Corp. of America v. Banner*, 778 F.2d775, 227USPQ773(Fed.Cir. 1085).

8. EP'028 does not teach the claimed expression (1): $(0.0012 \times [\text{target strength TS}] - 0.29 - [\text{Si}])/2.45 < \text{Al} < 1.5 - 3 \times [\text{Si}]$ but it has been well settled that there is no

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invention in the discovery of a general formula if it covers a composition described in the prior art, see *In re Cooper and Foley*, 57USPQ117. In the instant case, since the concentration of each element in prior art overlaps the claimed concentration of the corresponding element, then the claimed equation would have expected to be met in prior art. Moreover, EP'028 in claims 5 and 6 teach high strength and elongation at values that are attributed to claimed expression (1).

9. In regard to microstructure, EP'028 in claim 4 teaches ferrite and at least 15% of hardening structures of martensite, residual austenite and/or bainite, specifically at most 50% martensite and/or bainite and at most 10% residual austenite, and optionally at most 5-10% pearlite which would suggest Applicant's claimed microstructure containing ferrite and martensite without containing retained austenite. Note EP'028 teaches residual austenite, bainite and bainite as optional and therefore can be omitted.

10. In regard to properties, EP'028 in claims 5 and 6 teaches tensile strength ("TS") of 600-1100 MPa and $TS \times EI = 12,000-25,000 \text{ MPa}\%$ that would overlap and teach Applicant's claimed TS of 980 MPa or more and $TS \times EL$ of 16,000 or more, respectively.

11. In regard to claim 2, EP'028 in claim 1 teaches 0.2%max. V that overlaps with claimed 0.01 to 0.1%V.

12. In regard to claim 3, EP'028 in claim 1 teaches 30 ppm max B equivalent to 0.003%max B that overlaps with claimed 0.0005 to 0.002%B. Also EP'028 does not teach the claimed expression (2): $500 \times [B] + 0.2 [Al] < 2.9$ but it has been well settled that there is no invention in the discovery of a general formula if it covers a composition

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described in the prior art, see *In re Cooper and Foley*, 57USPQ117. In the instant case, since the concentration of each element in prior art overlaps the claimed concentration of the corresponding element, then the claimed equation would have expected to be met in prior art.

13. In regard to claim 4, EP'028 does not 0.005 to 0.005%Ca and 0.0005 to 0.005% REM. Nonetheless, it is common practice to add these elements in small amounts to analogous galvanizing steel alloy to control formation of oxides which degrade wettability during plating, as evident by paragraph [0041] of JP'513. Therefore, it would be well within the skill of the artisan to modify steel of EP'028 in view of secondary teaching of JP'513.

14. In regard to claims 6, 7 and 11 to 15, EP'028 in claims 15 and 16 teach hot-dip galvanizing hot/ cold rolled steel sheet.

15. For the foregoing reasons, claims would not patentably distinguish over prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/